



# *THAMES 3.0*

## *The Window to Threat Hazard Assessment*

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## Aim of THAMES 3.0

- The aim of THAMES is to identify Threats and Hazards to any conventional weapon system used throughout its life-cycle.
- As a Decision Support System, it enables those concerned with the operational planning, procurement and development of munitions to conduct design and environmental assessments and assign test procedures for safety and IM assessments.



# Output of THAMES

THAMES 3.0 provides:

- Design and Safety Requirements
- Assessment of the Design
- Tests to be Performed



# Foreseen Applications of THAMES 3.x

- The main purpose of THAMES 3.x is to facilitate the assessment of threats to munitions in each applicable situation. It will assign a programme of tests that should be used to demonstrate the behaviour of a munition when exposed to defined threats
- For each possible situation during the munitions life-cycle, THAMES 3.x will provide the facility to add information about:
  - the probability of any particular threat
  - the consequences of the munition response on the surroundings
  - the acceptable munitions response



# Foreseen Funtionalities of THAMES 3.x

- Define situations within a munitions life-cycle and within each situation the applicable threats
- Indicate consequences of threats to the surroundings
- Indicate probabilities of threats within each situation
- Indicate the acceptable response of the munition to threats
- Enable visibility and identification of the reasoning process
- Present the application of documents used within THAMES
- Ability to narrow down the number of applicable documents
- Enable the presetting of threats applicable to certain situations



# Status of THAMES 3.0 Development

- a feasibility study highlighted two main functions:
  - Threat Hazard Assessment of munitions
  - THA Document Information System
- the development resulted in :
  - a THAMES Beta II version released in March '99
  - an expanded THA approach
  - an extended prototype of the Document Information System



# Development Life-Cycle of THAMES

- THAMES 3.0 Beta II released March 1999, for testing purposes by key THAMES users
- THAMES 3.0 in Oct 1999, with data im/export functions, reporting facilities, and improved usability and performance
- THAMES 3.1 date tbd, advanced pre-selections, inclusion of a hazard assessment module and inclusion of National status in relation to NATO documents
- THAMES 3.2 date tbd, enhanced Threat and Hazard facilities, final user-interface, enhanced reporting facilities, maintenance facilities, on-line help, user-guide and system documentation

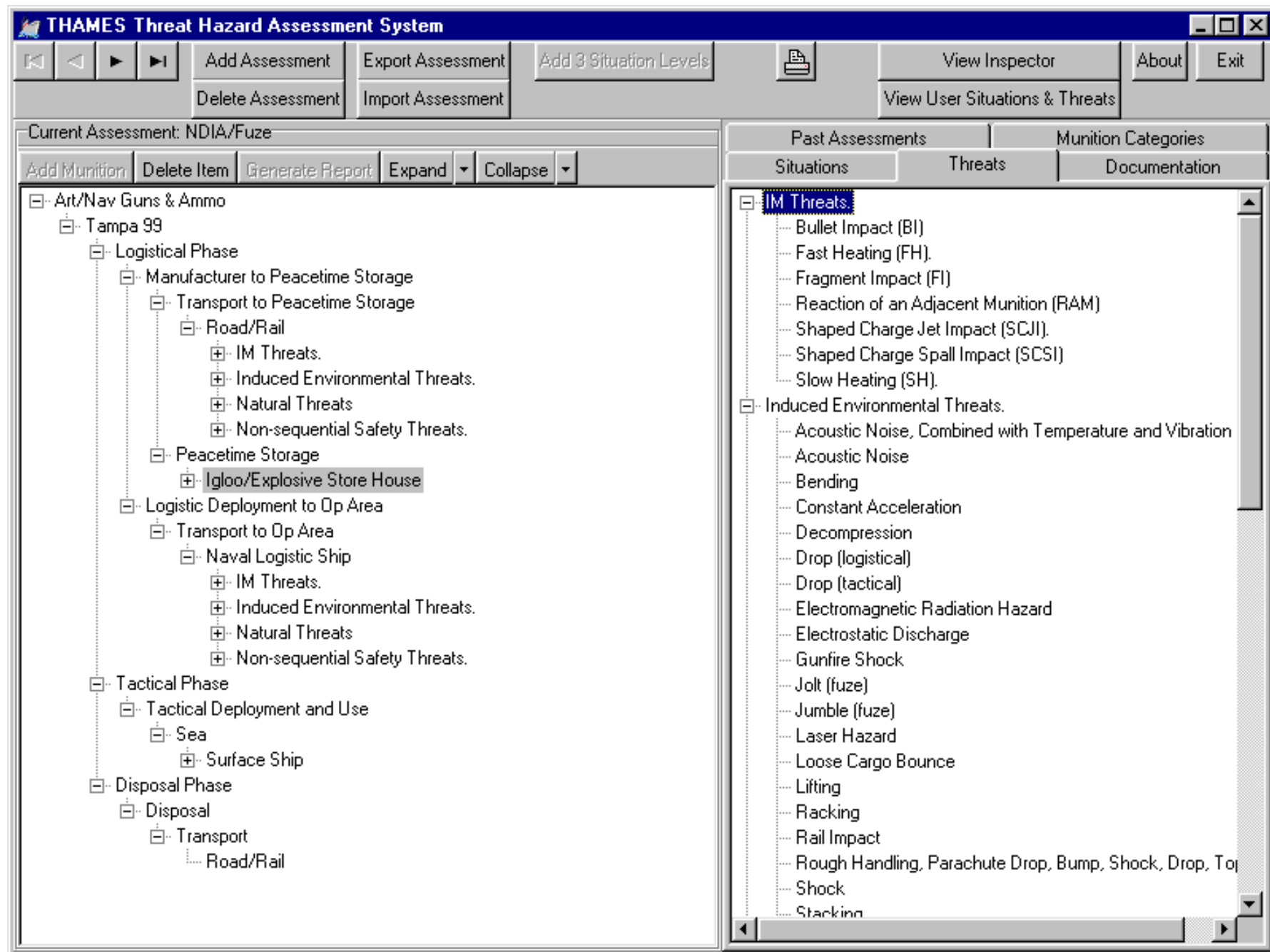
*This will strongly depend on the available resources within NIMIC and the support of Nations with additional programmer attachments*




# THAMES 3.0 Munition Categories

- THAMES 3.x will support the following list of munition categories:
  1. Artillery/Naval Guns and Ammunition
  2. Mortars and Mortal Ammunition
  3. Tank Guns and Ammunition
  4. Cannon (12.7 - 40 mm) Guns and Ammunition
  5. Grenades
  6. Small Arms and Small Arms Ammunition
  7. Land Mines
  8. Demolition/EOD Munitions
  9. Guided Weapons and Rockets, incl. Bombs, Dispensers, LAW
  10. Sea Mines and Depth Charges
  11. Torpedoes
  12. Pyrotechnics





Assessment Component Inspector	
<div> <div>DescriptionOptions</div> <div>AssessmentMunition CategoryMunitionSituationThreatTest</div> </div>	
<div> <div>  <div>Test Code</div> <div>JOLT</div> </div> <div> <div>Entered by</div> <div>NIMIC</div> </div> </div> <div> <div>Test Title</div> <div>Jolt (fuze) Test</div> </div> <div> <div>Description of the test as applied to the threat</div> <div></div> </div> <div> <div>Remarks about the test as applied to the threat</div> <div></div> </div>	<div> <div>Test Documentation</div> <div> <div>Nation: US</div> <div>Authority: DOD</div> <div>Originator: Army</div> <div>Document: MIL-STD 331</div> <div>Edition: B</div> <div>Draft:</div> <div>Status: CANCELLED</div> <div>Date: 1/03/97</div> </div> </div> <div> <div>FUZE AND FUZE COMPONENTS ENVIRONMENTAL AND PERFORMANCE TESTS FOR</div> </div> <div> <div>Section: Appendix A1</div> <div>TEST A1 - JOLT - APPENDIX A MECHANICAL SHOCK TESTS</div> </div> <div> <div>Description</div> <div> <div>1. PURPOSE</div> <div>This is a laboratory safety test simulating ground transportation-conditions. The fume must withstand a series of impacts applied in a controlled direction and amplitude.</div> <div>2. DESCRIPTION</div> <div>2.1 General.</div> <div>Fuses are subjected to 1750 impacts in three orientations: major axis horizontal and major axis vertical both nose up and down.</div> <div>2.1.1 Jolt machine method</div> </div> </div> <div> <div>NIMIC/National Note</div> <div></div> </div> <div> <div>Record: XX</div> <div> <div>⏮</div> <div>⏪</div> <div>⏩</div> <div>⏭</div> </div> </div>
<div> <div>Accept</div> <div>Undo</div> <div>Help</div> <div>Stay On Top</div> <div>View Main Form</div> </div>	



# THAMES 3.x Document Information System

- THAMES 3.x will incorporate all relevant NATO documents associated with munition safety and suitability for service as well as Insensitive Munition (IM) requirements, and allows the capability to include relevant national documents.
- the system will include:
  - design, testing, environmental, S<sup>3</sup> and policy type documents
  - status of documents (promulgated, draft, etc)
  - abstract and objectives of documents
  - document information (host organisation, date, etc.)
  - relations between document sections and munitions, threats and tests
  - relations between documents (implements, references, relates)



# Conclusions

- the feasibility study and analysis are completed, resulting in:
  - an expanded functionality
  - a Threat Hazard Assessment Document Information System
- a THAMES 3.0 Beta II prototype has been developed:
  - is available for testing purposes by key users
  - for the THA Document Information System
- the THAMES 3.0 is a subset of the foreseen full application and functionalities
- an operational THAMES 3.0 version will be available later this year to Government and Industrial organizations of NIMIC member Nations



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